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PIPE CUTTER

FIELD OF THE INVENTION

The present invention relates to a pipe cutter having two rollers and a disk blade wherein one of the rollers and the disk blade are movable and connected together by links so that the pipe to be cut is evenly and firmly clamped by three contacting points.

BACKGROUND OF THE INVENTION

A conventional pipe cutter generally includes a body made of cast iron, fixed two rollers arranged to an inner side of the body and a movable blade disk movably connected to a threaded rod which can be moved by rotating a knob connected to a distal end of the threaded rod. A pipe to be cut can be clamped by the two fixed rollers and the disk blade which is moved toward the two fixed rollers. By rotating the threaded rod, the disk blade cuts the pipe. However, the speed to move the disk blade is so slow so that it takes a lot of time to cut the pipe. In addition, the conventional pipe cutter can be only used to cut the pipe having the smaller diameter, because the distance between the two rollers is not adjustable so that a pipe having a large diameter will not well clamped between the two rollers and the disk blade. Furthermore, the threaded rod can only be moved in a fixed direction and this limits the positions where the rollers are located. All of the three pipe cutters are made in a form of a one-piece article which is made of cast iron which heavy so that the users cannot use them conveniently. The cost for manufacturing the conventional pipe cutters is high and therefore reduces the commercial benefit.

The present invention intends to provide an improved pipe cutter wherein one of two rollers is fixed and the other is movable, the disk blade is movable and pivotally connected to the movable roller by two links so that the two rollers and the blade disk clamp the pipe to be cut evenly on the outside of the pipe, and the pipe cutter of the present invention may clamp pipes with different diameters.

SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention, there is provided a pipe cutter comprising a body having two side walls and each of the side walls having an arcuate slot defined therethrough. The body has a first end with a rod movably extending therethrough and a second end having a first contacting member rotatably connected thereto. A first link has a first end thereof pivotally connected to the body and a second end thereof having a disk blade rotatably connected thereto. The rod is pivotally connected to the first link. A second link has a first end thereof pivotally connected to the first link and a second end thereof having a second contacting member rotatably connected thereto. The second contacting member has two protrusions extending centrally and longitudinally therefrom so as to move within the two arcuate slots.

An object of the present invention is to provide a pipe cutter with a fixed roller, a movable roller and a movable disk blade so as to clamp a pipe to be cut firmly.

Further objects, advantages, and features of the present invention will become apparent from the following detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the first embodiment of the pipe cutter in accordance with the present invention;

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FIG. 2 is an exploded view of the first embodiment of the pipe cutter in accordance with the present invention;

FIG. 3 is an illustrative view to illustrate the first embodiment of the pipe cutter of the in accordance with the present invention, wherein the two rollers and the disk blade are moved together;

FIG. 4 is an illustrative view to illustrate the first embodiment of the pipe cutter of the in accordance with the present invention, wherein a small pipe is clamped in the pipe cutter;

FIG. 5 is an illustrative view to illustrate the first embodiment of the pipe cutter of the in accordance with the present invention, wherein a large pipe is clamped in the pipe cutter;

FIG. 6 is a perspective view of the second embodiment of the pipe cutter in accordance with the present invention;

FIG. 7 is an exploded view of the second embodiment of the pipe cutter in accordance with the present invention;

FIG. 8 is an illustrative view to illustrate the second embodiment of the pipe cutter of the in accordance with the present invention, wherein the two rollers and the disk blade are moved together;

FIG. 9 is an illustrative view to illustrate the second embodiment of the pipe cutter of the in accordance with the present invention, wherein a small pipe is clamped in the pipe cutter;

FIG. 10 is an illustrative view to illustrate the second embodiment of the pipe cutter of the in accordance with the present invention, wherein a large pipe is clamped in the pipe cutter;

FIG. 11 is a perspective view of the third embodiment of the pipe cutter in accordance with the present invention;

FIG. 12 is an exploded view of the second embodiment of the pipe cutter in accordance with the present invention;

FIG. 13 is an illustrative view to illustrate the second embodiment of the pipe cutter of the in accordance with the present invention, wherein the two rollers and the disk blade are moved together;

FIG. 14 is an illustrative view to illustrate the third embodiment of the pipe cutter of the in accordance with the present invention, wherein a small pipe is clamped in the pipe cutter;

FIG. 15 is an illustrative view to illustrate the third embodiment of the pipe cutter of the in accordance with the present invention, wherein a large pipe is clamped in the pipe cutter;

FIG. 16 is an exploded view of the fourth embodiment of the pipe cutter in accordance with the present invention;

FIG. 17 is an illustrative view to illustrate the fourth embodiment of the pipe cutter of the in accordance with the present invention;

FIG. 18 is an end view to show the two side walls connected with each other of the fourth embodiment of the pipe cutter;

FIG. 19 is an exploded view of the fifth embodiment of the pipe cutter in accordance with the present invention, and

FIG. 20 is an illustrative view to illustrate the fifth embodiment of the pipe cutter of the in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 to 4, the pipe cutter in accordance with the present invention comprises a body 10 having an arcuate plate 101 and the two side walls 102 extending from